

GALYTKER, I.I., inzh.; USHAKOV, A.A.

Four-valve distributor with pilot control. Leg.prom. 18 no.11:
29-31 N '58. (MIRA 11:12)
(Pneumatic control)

USHAKOV, A. A.

SVINTSOV, P. M. (Professor, Doctor of Veterinary Sciences) and USHAKOV, A. A.
(Candidate of Veterinary Sciences, All-Union Institute of Experimental Veterinary
Medicine). Infectious diseases of fowl.

So: Veterinariya; 2h; 11; November 1947; Uncl.
TABCON

USHAKOV, A.A.

SVINTSOV, P.M. USHAKOV, A.A., SKRYABIN, K.I.

"Diseases of Fowl". Under the editorship of P.M. Svintsov and A.A. Ushakov with preface by Academician K.I. Skryabin. Moscow. Sel'khozgiz, 1951. 440 pages with illustrations. Price 10 rubles, 10 kopeks, bound, 15,000 copies. Volume 1- Infectious and protozoic diseases. Disinfection, disinsectization and deratization.

In the book is presented the material which characterizes the problem of infectious and partially epidemic diseases of fowl, in the development of which material the soviet veterinarians have introduced much new stuff having a great theoretical and practical value.

SO: Veterinariya; May 1952 uncl de g
Trans. # 155 by L. Lulich

29 (4) pp 62-4

USHAKOV, A.A.

SMETNEV, S.I., prof., doktor sel'skokhoz.nauk; **BOGDANOV, M.N.**, zootekhnik; **GOFMAN, M.B.**, zootekhnik; **GRIGOR'YEV, G.K.**, zootekhnik; **ZHIDKIKH, Z.A.**, kand.sel'skokhoz.nauk; **PENIONZHKEVICH, E.E.**, doktor biolog.nauk, prof.; **PREVO, A.A.**, kand.biolog.nauk; **TRET'YAKOV, N.P.**, doktor sel'skokhoz.nauk, prof.; **USPENSKIY, A.A.**, kand.sel'skokhoz.nauk; **USHAKOV, A.A.**, kand.veterin.nauk; **SHAPOVALOV, Ya.Ya.**, kand.sel'skokhoz.nauk; **YAGODIN, P.Ye.**, zootekhnik; **YATSYNIN, N.N.**, zootekhnik; **FEDOROVSKIY, N.P.**, kand.biol.nauk; **SYCHIK, Ye.V.**, red.; **PAVLOVA, M.M.**, tekhred.

[Poultry raising; a manual for farm managers] Ptitsevodstvo; rukovodstvo dlia zavedulushchego fermoi. Izd.5, perer.i dop. Moskva, Gos.isd-vo sel'khoz.lit-ry, 1957. 495 p. (Bibliotekha po ptitsevodstvu, no.1) (MIRA 12:4)

1. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Smetnev). (Poultry)

USHAKOV, A.A.

Principle of design for a self-piling section feeder for
sewing machines. Shvein.prom. no.1:16-18 Ja-F '60.
(MIRA 13:6)
(Automatic control) (Sewing machines)

USHAKOV, A.A.

Automatic sewing machine. Nauch.-issl. trudy TSNIIShveiproza no.12:
57-78 '63. (MIRA 17:9)

USHAKOV, A.A.; MIZONOV, Ye.D.

Studying the mechanical properties and wear resistance of
impregnated and nonimpregnated cotton belts. Izv. vys.ucheb.zav.;
tekh.tekst.prom. no.2:168-175 '58. (MIRA 11:5)

1. Ivanovskiy 'ekstil'nyy institut.
(Cotton fabrics--Testing)

BERG, P.P., doktor tekhn.nauk; BIDULYA, P.M., doktor tekhn.nauk; GRECHIN, V.P., kand.tekhn.nauk; DOVGALEVSKIY, Ya.M., kand.tekhn.nauk; ZHUKOV, A.A., inzh.; ZINOV'YEV, N.V., inzh.; KRYLOV, V.I., inzh.; KUDRYAVTSEV, I.V., doktor tekhn.nauk; LANDA, A.F., doktor tekhn.nauk; LEVI, L.I., kand.tekhn.nauk; MALAKHOVSKIY, G.V., inzh.; MIL'MAN, B.S., kand.tekhn.nauk; SOBOLEV, B.F., kand.tekhn.nauk [deceased]; SKOMOROKHOV, S.A., kand.tekhn.nauk; STEPIN, P.I., kand.tekhn.nauk; USLAKOV, A.D., kand.tekhn.nauk; FRIDMAN, L.M., inzh.; KHRAPKOVSKIY, E.Ya., inzh.; TSYPIN, I.O., kand.tekhn.nauk; SHKOL'NIKOV, E.M., kand.tekhn.nauk; POGODIN-ALEKSEYEV, G.I., prof., doktor tekhn.nauk, red.; BOLKHOVITINOV, N.F., prof., doktor tekhn.nauk, red.toma; LANDA, A.F., prof., doktor tekhn.nauk, red.toma; RYBAKOVA, V.I., inzh., red.izd-va; SOKOLOVA, T.F., tekhn.red.

[Handbook on materials used in the machinery industry] Spravochnik po mashinostroitel'nym materialam; v chetyrekh tomakh. Pod red. G.I.Pogodina-Alekseeva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ny. Vol.3. [Cast iron] Chugun. Red.toma N.F.Bolkhovitov i A.F.Landa. 1959. 359 p. (MIRA 13:1)
(Machinery industry) (Cast iron)

'10(4)
AUTHOR:

Ushakov, A. A., Engineer

SOV/119-59-9-16/19

TITLE:

A New Type of Damping Device

PERIODICAL:

Priborostroyeniye, 1959, Nr 9, pp 29-30 (USSR)

ABSTRACT:

The author's certificate Nr 115444, issued by the Komitet po delam izobreteniy i otkrytiy pri Sovete Ministrov SSSR (Committee of Inventions and Discoveries at the Council of Ministers of the USSR) is valid for this device. In investigating the operation of piston engines and reaction alternators, or that of compressors the necessity arises of measuring pressures in gas - air and in fuel systems. The pressures in these systems are pulsating pressures, as is generally known. Pulsations amount to 20 - 30% of the average value of the pressure to be measured in some cases. The frequency of pulsation is some thousand cycles. Direct contact of this indicator with the pulsating system rapidly wears out its mobile parts and, in addition, renders evaluation of recorded results difficult. For this reason damping devices must be employed, which produce a "smoothing" of the pressure to be measured. Damping devices generally applied are pipes of small diameter, nets, a hatch of disks with small holes, etc, which are mounted

Card 1/2

SOV/119-59-9-16/19

A New Type of Damping Device

at the orifice of the chamber of the sensitive instrument of the device. The main drawback of the damping devices in use at present is the easy clogging by solid particles contained in the flowing medium (or gas). A new type of such damping devices is largely free of the drawbacks of the usual dampers. The principal scheme of this damper is given in a figure. In a metal tube having a length l_T and an inner diameter D_T thin wires with a diameter d and length l_n are fixed. The length of the wires exceeds the length of the tube by $2h = l_w - l_T$. The wires completely fill the cross section of the tube. The exterior form of the tube varies with the site of the damper and may have a winding, or a flange. The fluid or the gas flows through the interspaces between the wires and between the wires and the wall of the tube. The protruding ends of the wires form a filter. Even after complete contamination of the front ends of the wires the characteristic properties of the damper remain unchanged. The construction of the damper makes a purification of the filter fluid easy. A figure shows a scheme of this damper. There are 1 figure and 1 Soviet reference.

Card 2/2

USHAKOV, A. A.

Low-frequency stand for dynamic testing of overload devices.
Priborostroenie no. 11:27 N '61. (MIRA 14:10)
(Testing machines)

USHAKOV, A.A., mladshiy nauchnyy sotrudnik; A.M. KRYKOV, k.s.s., mladshiy
nauchnyy sotrudnik.

Two-position hydraulic press for the processing of collar and
cuffs on men's shirts. Nauch.-issl. trudy I.N.I. (Moscow) no. 17:
115-123 '62 (USSR 3787)

UCHAKOV, A.A., elektromekhanik; NEKHAY, A.T., monter svyazi

Protection unit of the ASU-50 automatic information desk,
Arton, talen. i svyaz' 9 no.10:24 0 '65. (MIRA 18:11)

1. Olesukaya distantsiya Odesako-Kishinevskoy dorogi.

USHAKOV, A. B.

185T87

USSR/Metals - Cast Iron

Jan 51

"Application of Inoculated Gray Cast Iron as a Substitute for Steel and Malleable Iron in Tractor Parts," B. I. Gostey, A. B. Ushakov, Candidates Tech Sci, VUZ-NAATI

"Iltey Proiz" No 1, pp 2-4

High quality of inoculated cast iron is conditioned by obtaining min quantity of undissolved graphite in liquid metal in order to have uniform liquid phase before modification. Liquid cast iron was inoculated with sillicocalcium and 75% ferrosilcon. Latter proved more effective.

185T87

USSR/Metals - Cast Iron (Contd)

Jan 51

Inoculant, crushed to 2-5 mm size, was added into furnace or ladle in amt of 0.3% of liquid metal at temp of 1,390-1,410°. Gives chem compn of exptl parts after inoculation.

185T87

SHUL'TE, Yu.A.; KURBATOV, M.I.; RIDNYI, A.A.; KOSTINSKIY, D.S.;
KUGEL', R.V.; USHAKOV, A.D.

Manganese content in high manganese steel for track shoes. Lit.
proizv. no.11:27-30 N '61. (MIRA 14:10)
(Manganese steel---Analysis) (Steel castings)

GOSTEV, B.I., kandidat tekhnicheskikh nauk; USHAKOV, A.D., kandidat tekhnicheskikh nauk; KONONOVA, T.A., inzhener; AKOPYAN, S.I., kandidat tekhnicheskikh nauk, redaktor; VASIL'YEV, A.V., kandidat tekhnicheskikh nauk, redaktor; KRISTI, M.K., professor, redaktor; L'VOV, Ye.D., professor, redaktor; MALASHKIN, O.M., inzhener, redaktor; YUDUSHKIN, N.G., inzhener, redaktor; MODKIL', B.I., tekhnicheskii redaktor.

[Investigating cast iron with spheroidal graphite inclusions and its use for tractor parts] Issledovanie chuguna so sferoidal'noi forme grafite i primeneniye ego dlia trakternykh detal'ei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1943.36 p. (Moscow. Gosudarstvennyi seluznyi nauchno-issledovatel'skii trakternyi institut [Trudy], no.7) (MLRA 9:1)

1.Direktor nauchno-issledovatel'skego tekhnologicheskogo instituta (for Akopyan).

(Cast iron) (Tractor industry)

USHAKOV, A. D.

Increasing resistance to wear in tractor engine cylinder sleeves.
Avt. i trakt. prom. no.2:12-14 F '57. (MIRA 10:3)

1. Nauchno-issledovatel'skiy abtotraktornyy institut.
(Cylinders)

USHAKOV, A.D.

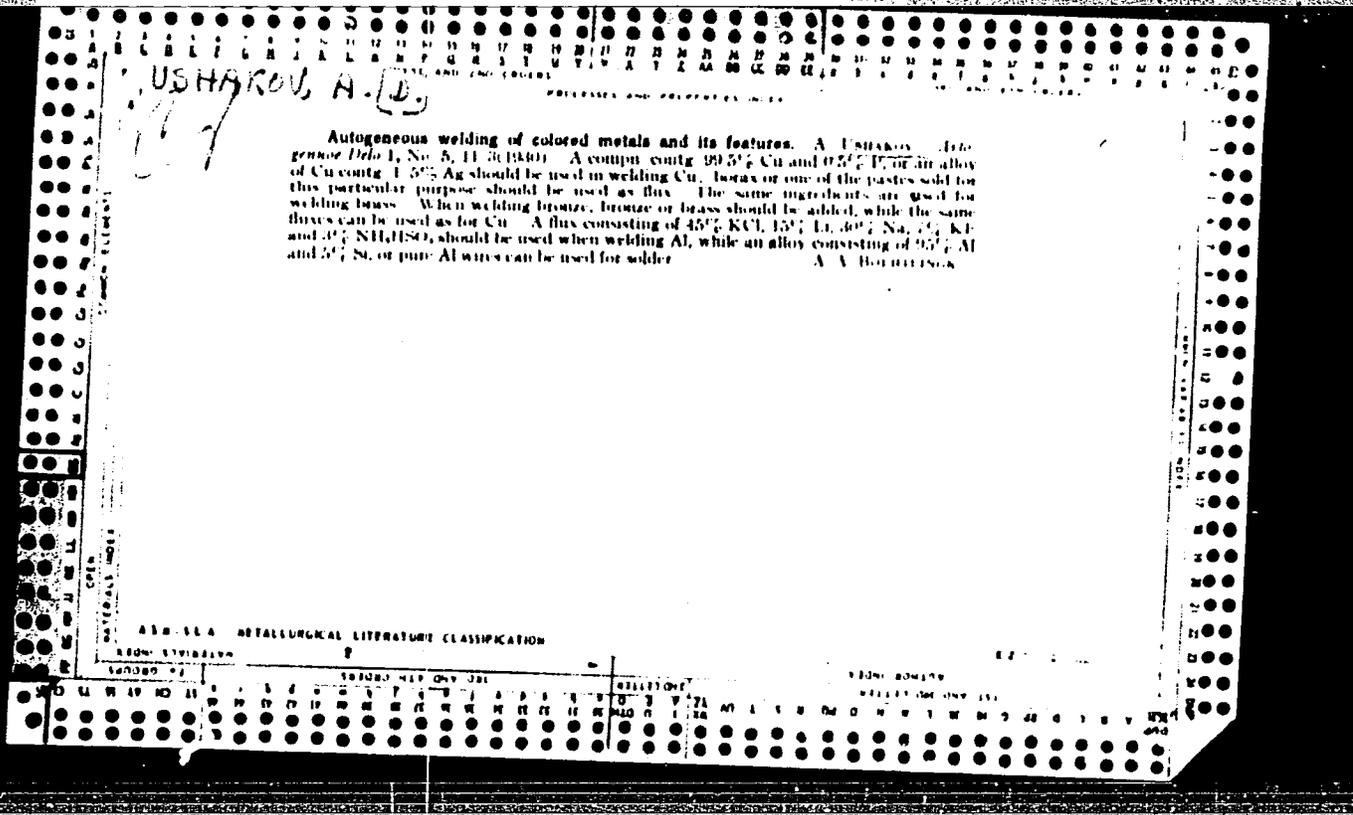
Use of new materials in the tractor industry. Trakt.i sel'-
khozmasb. 30 no.2:15-18 F '60. (MIRA 13:5)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.
(Tractors)

USHAKOV, A.D., kand. tekhn. nauk; BEGIDZHANOVA, A.P., kand. tekhn. nauk

Using plastics in the tractor industry. Trakt. i sel'khoz mash. 30
no. 9:39-44 S '60. (MIRA 13:9)

1. Nauchno-issledovatel'skiy avtotraktornyy institut.
(Tractor industry) (Plastics)



USHAKOV, A. D.

PA 233T60

USSR/Metallurgy - Cast Iron, Modification Jul 52

"Sulfur in Cast Irons Treated With Magnesium and Cerium," A.D. Ushakov, T.A. Kononova, Candidates Tech Sci

"Litey Proizvod" No 7, pp 22, 23

Studies influence of sulfur on process of obtaining cast iron with spheroidal graphite during inoculation with Mg and Ce. There is no significant desulfurization of cast iron caused by addn of these inoculants. Sulfur, combined with Mg and Ce in form of complex compds of sulfides, cannot be detd by usual methods of analysis. These sulfides remain in metal and decompose at high temp during overheating liquid cast iron. 233T60

USHAKOV, A. D.

Wear resistance of iron with nodulized graphite. A. D. Ushakov and K. M. Khrushcheva. *Uchenye Proisvodstvo* 1953, No. 7, 21-3. — An induction furnace heat of iron contg. C 3.46, Si 2.42, Mn 0.6, P 0.38, and S 0.014% was treated with a 20% Mg-80% Cu alloy, with 0.8% C ferrosilicon (75%), cast into bars 30 mm. in diam., and the latter malleabilized at 720° for different time to change the ferrite-pearlite ratio of the samples. Specimens were then annealed from 900°, quenched from the same temp., and quenched and tempered, in no case resulting in the change of nodulized graphite. Their wear characteristics and coeffs. of friction were compared with conventional cast iron with flaky graphite, with brass and bronze. The wear resistance of nodulized iron with up to 40% pearlite is greater than of modified gray iron with pearlitic matrix, of bronze and brass, but much inferior to them from the antifriction standpoint. The coeff. of friction is the same for nodulized and conventional iron. Hardened and drawn, normalized, and quenched nodulized iron has a better wear resistance than the usual gray iron, but in their case the steel contact roll wore faster than the bearings. J. D. Cat

USHAKOV, A.D.

Sulfur in magnesium-treated cast iron. A. D. Ushakov and A. I. Nizhevich, *Litinskiy Proizvodstvo* 1954, No. 4, 26.
—When S is detd. in a Mg-modified cast iron, its concn. appears to be lower than before modification. A cast iron with C 3.20-3.40, Si 2.0-2.2, Mn 0.75, S 0.09-0.11, and P 0.012-0.15%, in which S was introduced as a S^{32} isotope before modification, was modified with 0.3% Mg introduced as a MgSi alloy. After dissolving in HNO₃ and filtering, S detn. in the filtrate showed 0.03% S, but on reheating the alloy to 1550° and repeating the detn. a S content of 0.08% was recorded. The element is apparently tied in complex sulfides and carbides to the extent that it cannot be detd. by conventional analytical methods. J. D. Gat

57

H. SHAKOV, A.D.

USSR.

Growth resistance of nodulized iron. A. D. Ishakov. *Litovsk. Proizvodstvo* 1955, No. 4, 22-3. Nodulized iron contg. C 3.14, Si 2.04, Mn 0.79, P 0.105, S 0.038, and Mg 0.003% and modified with Si lamellar-graphite iron contg. C 2.6, S 1.70, Mn 0.6, P 0.11, and S 0.036% was cast in green sand into 30-mm. diam. bars and either annealed at 930° for producing ferritic structure or used as cast to retain their pearlitic matrix. The bars placed in a dilatometer were heated at 3-4°/min. to 500, 700, and 800° and held at the temp. for 3 hrs., after which their growth was detd. by the distance between the heating and cooling branches of the dilatometric curve. Irons with a ferritic matrix grow less than those with a 2-phase matrix, and the nodulized iron in this case shows 4 times lesser growth than iron with lamellar graphite. With the pearlitic matrix this difference decreases, but still the nodulized iron grows only one half as much as graphitic both at 700 and 800°. Detn. of the coeff. of thermal expansion of nodulized iron showed 11.26, 11.51, and 12.07 × 10⁻⁴ for temp. ranges of 20-100, 20-200, and 20-300°. Av. linear thermal expansion of nodulized iron is 6-7% higher than of iron with lamellar graphite. J. D. Gat

Liskakov, A. P.

✓ Influence of sulfur on graphite nodulization. A. D. Liskakov. *Leningradskoe Primenenie* 1955, No. 9, 10-13. On the effect of S as FeS to iron nodulized with Mg and Mn.

USHAKOV, A.D., inzhener.

Formation of gas blowholes on the surface of magnesium iron
castings. Lit. proizv. no.3:19-20 Nr '57. (MLRA 10:4)
(Founding--Quality control) (Iron magnesium alloys--Metallography)

USHAKOV, A.D.,

AUTHOR: Ushakov, A.D., Candidate of Technical Sciences 128-58-5-8/16

TITLE: The Wear Resistance of Magnesium-Treated Cast Iron with a Different Metal Structure (Iznosostoykost' magniyevogo chuguna s razlichnoy metallicheskoj osnovoy)

PERIODICAL: Liteynoye Proizvodstvo, 1958, Nr 5, pp 17-18 (USSR)

ABSTRACT: The described test was carried out on magnesium-treated cast iron with spherical graphite and a different metal structure - normalized pearlitic, isothermally hardened with troostitic sorbitic base, spheroidal pearlite, and ferrite-cementitic (with up to 50% cementite). The chemical composition of the cast iron was: 3.1-3.35% C, 2.25-2.38% Si, 0.9-1.0% Mn, 0.052-0.055% P, 0.009-0.014% S, 0.04-0.058% Mg. Details of the applied heat treatment are given, and the obtained microstructures are shown in photographs. The iron was melted in a high-frequency furnace and treated (in the furnace) by a silicium-magnesium alloy with 15% Mg to spheroidize graphite. The wear resistance of cast iron with different structures was tested, under different loads, up to 75 kg/cm² and higher, on an Amsler friction machine. The data shows that the type of structure has a considerable effect on the wear resistance

Card 1/2

128-58-5-8/16

The Wear Resistance of Magnesium-Treated Cast Iron with a Different Metal Structure

of magnesium-treated cast iron. This must be considered when selecting spherical-graphite cast iron for different uses. Candidate of Technical Sciences Nisevich, A.I., and Junior Scientific Worker Kononova, T.A., participated in the investigation.

There are 4 photographs and 2 graphs.

AVAILABLE: Library of Congress

Card 2/2

USHAKOV, A.D.

Fin-resistant properties properties of sulfurous cast iron. Lit.
proizv. no.10:41-43 0 '60. (MIRA 13:10)
(Cast iron--Defects)

USHAKOV, A. F.

20877/ Ushakov, A. F. Sovremennyye tipy sveklokombaynov i agrotekhnicheskaya ikh otsenka. Sbornik nauk. Rabot (Vsesoyuz, nauk. -issled. in-T sakhar. svekly) Kiyev-Khar'kov, 1948, s.53-57/

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949.

USHAKOV, A.F., et al

Agriculture

Mechanizing the cultivation of sugar beets. Moskva, Gos. izd-vo sel'skokhoziaistvennoe lit-ry, 1951.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

USHAKOV, A.F.

VIKHERT, A.M.,; USHAKOV, A.F.(Moskva)

Extrarenal hepatogenic azotemias; clinico-anatomical considerations.
Ark. pat. 18 no.1:104-105 '56. (MLRA 9:6)

1. Iz laboratorii, rukovodimoy deystvitel'nym chlenom AMN SSSR
prof. I.V. Davydovskim.

(UREMIA,
extrarenal hepatogenic (Rus))
(LIVER, diseases,
azotemia, extrarenal (Rus))

USHAKOV, A.F., kand.sel'skokhos.nauk.

Methods of harvesting sugar beets. Trakt. 1 sel'khozrazh. no.11:
21-24 N '59. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sakharnoy svekly.
(Sugar beets--Harvesting)

USHAKOV, Aleksandr Fedorovich [Ushakov, O.F.], kand.sel'skokhoz.nauk;
KARPENKO, S.O., inzh., glavnyy red.; FAL'KO, Yu.G. [Fal'ko, IU.H.],
red.

[Mechanized cultivation and harvesting of sugar beets] Mekhani-
zatsiia vyroshchuvannia i sbyrannia tsukrovykh buriakiv. Kyiv,
1960. 38 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh
znan' Ukrain's'koi RSR. Ser.6, no.17).

(MIRA 14:1)

(Sugar beets)

(Agricultural machinery)

BUZANOV, Ivan Feoktistovich, akademik; VARSHAVSKIY, Boris Yakovlevich;
KUZ'MICH, Semen Iovlevich; PODTYKAN, Yakov Petrovich; PRISYAZHNYUK,
Prokopy Fedorovich; USHAKOV, Aleksandr Fedorovich; ONOPRIYENKO,
M.M., red.; MANOYLO, Z.T., tekhn.red.

[Growing sugar beets with the least expenditures of labor] Vy-
rashchivanie sakharnoi svekly s minimal'nymi zatratami truda.
Kiev, Izd-vo Ukrainskoi akad.sel'khoz.nauk, 1960. 91 p.

(MIRA 13:11)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.
Lenina i Ukrainakaya akademiya sel'skokhozyaystvennykh nauk (for
Buzanov).

(Sugar beets)

BUZANOV, I.F., akademik, nauchnyy sotrudnik, laureat Leninskoy premii;
VARSHAVSKIY, B.Ya., nauchnyy sotrudnik; KUZ'MICH, S.I., nauchnyy
sotrudnik; PODTYKAN, Ya.P., nauchnyy sotrudnik; PRISYAZHNYUK, P.F,
nauchnyy sotrudnik; USHAKOV, A.F., nauchnyy sotrudnik; ONOPRIYENKO,
M.M., red.; VIDONYAK, A.P., tekhn.red.

[New technology of sugar beet cultivation] Novaia tekhnologiya
vozdelyvaniia sakharnoi svekly. Kiev, Izd-vo Ukrainskoi akad.
sel'khoz.nauk, 1961. 27 p. (MIRA 15:4)

1. Kiyev. Vsesoyuznyy nauchno-issledovatel'skiy institut sakharnoy
svekly. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut sakharnoy
svekly (for all except Onopriyenko, Vidomyak). 3. Vsesoyuznaya akade-
miya sel'skokhozyaystvennykh nauk imeni V.I.Lenina i Ukrainskaya akade-
miya sel'skokhozyaystvennykh nauk (for Buzanov).
(Ukraine--Sugar beets)

VARSHAVSKIY, Boris Yakovlevich [Varshavs'kyi, B.Ya.], kand. sel'khoz. nauk;
KUZ'MICH, Semen Iovlevich [Kuz'mych, S.I.], kand. sel'khoz. nauk;
USHAKOV, Aleksandr Fedorovich, kand. tekhn. nauk; DERKACH, T.V.,
zasluzhennyy agronom URSR, Geroy Sotsialisticheskogo Truda, otv. red.;
GURENKO, V.A. [Hurenko, V.A.] red.

[Practices of growing monospermous sugar beets] Dosvid vyroshchuvannia odnonasinnnykh tsukrovyykh buriakiv. Kyiv, 1961. 42 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrain's'koi RSR. Ser. 5, no. 3)

(MIRA 14:7)

(Sugar beets)

USHAKOV, Aleksandr Fedorovich; KLYAVIR, Isidor Yur'yevich
[Kliavir, I.IU.]; SINEGUB, S.I.[Syn'ohub, S.I.], red.;
GULENKO, O.I.[Hulenko, O.I.], tekhn. red.

[Over-all mechanization of growing sugar beets] Kompleksnaia
mekhanizatsiia v buriakivnytstvi. 2., perer. i dop. vyd.
Kyiv, Derzhsil'hospvydav URSR, 1962. 229 p. (MIRA 16:4)
(Ukraine--Sugar beets)
(Ukraine---Agricultural machinery)

BUZANOV, I.F., red.; VARSHAVSKIY, B.Ya., red.; ORLOVSKIY, N.I., red.;
PODTYKAN, Ya.P., red.; SHEVCHENKO, V.N., red.; POZHAR, Z.A.,
red.; AREF'YEV, T.I., red.; USHAKOV, A.F., red.; MAKSIMOVICH,
A.Ye., red.; SIDOROV, A.A., red.; DANIKOVA, M.G., red.;
SERDYUK, B.M., red.; LAPCHENKO, K.P., tekhn. red.

[Basic conclusions of research work in 1959-1960] Osnovnye vy-
vody nauchno-issledovatel'skikh rabot za 1959-1960 gg. Kiev,
Izd-vo UASKhN, 1962. 308 p. (MIRA 16:4)

1. Kiev. Vsesoyuznyy nauchno-issledovatel'skiy institut sa-
kharnoy promyshlennosti. 2. Deystvitel'nyy chlen Vsesoyuznoy
akademii sel'skokhozyaystvennykh nauk im.V.I.Lenina (for
Buzanova).

(Sugar beets--Research)

BUZANOV, I.F.; SAMBUROV, V.I.; YEMETS, G.M.; ORLOVSKIY, N.I.;
NEGOVSKIY, N.A.; FEDOROV, A.I.; GREKOV, M.A.; KURBATOV,
S.T.; MEL'NICHUK, A.N.; TONKAL', Ye.A.; GORNAYA, V.Ya.;
ROZHDESTVENSKIY, I.G.; SIDOROV, A.A.; KUDARENKO, F.P.;
BROVKINA, Ye.A.; GELLER, I.A.; DOBROTVORTSEVA, A.V.;
VARSHAVSKIY, B.Ya.; KUTSURUBA, N.V.; KUZ'MICH, S.I.;
PRESNYAKOV, P.V.; USHAKOV, A.F.; SHEVCHENKO, V.N.;
KHUCHUA, K.N.; PETRUKHA, Ye.I.; POZHAR, Z.A.; SHAPOVALOV,
P.T.; AREF'YEV, T.I.; GRIGOR'YEVA, A.I., red.; BALLOD,
A.I., tekhn. red.

[Sugar beets] Sakharnaia svekla. Moskva, Sel'khozizdat,
1963. 487 p. (MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sa-
kharnoy svekly. 2. Nauchnyye sotrudniki Vsesoyuznogo
nauchno-issledovatel'skogo instituta sakharnoy svekly
(for all except Grigor'yeva, Ballod).
(Sugar beets)

USHAKOV, A. I.

Changing a tensile-testing machine from manual to mechanical operation. Stroi.pred.neft.prom. 1 no.8:15 0 '56. (MLRA 9:12)

1. Mekhanik remontnoy bazy, Trest no.7, Moskva.
(Testing machines)

TAZ'BA, Shabsay L'vovich; USHAKOV, Anatoliy Ivanovich; POSTERNYAK, Ye.F.,
inzh., red.; SHILLING, V.A., red. izd-va; GVIRTS, V.L., tekhn.
red.

[Using program control in the automation of a turret lathe] Avto-
matizatsiia revol'vernogo stanka s primeneniem programmogo up-
ravleniia. Leningrad, 1961. 24 p. (Leningradskii Dom nauchno-
tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Moder-
nizatsiia, avtomatizatsiia i remont oborudovaniia, no.2)

(MIRA 14:7)

(Lathes—Numerical control)

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27268

S/579/61/000/000/002/002
D221/D304

AUTHORS: Ushakov, A.I. and Taz'ba, Sh.L.

TITLE: The automation of turret lathes based on the use of pneumo-hydraulic drive and program control

SOURCE: Kucher, I.M., ed. Avtomatizatsiya metallorezhushchikh stankov, Moscow, Mashgiz, 1961, 67-90

TEXT: The turret lathes made by A. Herbert, model 2S, were automated. The machine was equipped with a mechanism that ensured fast approach, working feed and either fast or slow return of the turret. The cross slide travel was also automated. Other functions (speed change, feed of material, etc.) were mechanized, by applying pneumo-hydraulic drive. The kinematic arrangement is shown in Fig. 2. The air is dehumidified in precipitator 1, and then enters by various valves, which are solenoid-controlled into different cylinders. Both chambers of the latter are

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The automation of turret ...

connected to the atmosphere. The feed and clamping of bar is ensured by an energizing solenoid 3, and thus directs the compressed air into the right hand part of cylinders 5 and 4. The control of clamping is provided by pneumatic signalling branched into the left hand side of cylinder 5 to check the fall of pressure in the main line. The change-over of the friction clutch in the gear box as well as the clamping of the turret are obtained by cylinders 8 and 6. The pneumo-hydraulic drive of the cross and longitudinal slides is shown. The former is ensured by two pneumo-hydraulic cylinders, with their rods interconnected by a cross member. The lower is tied to the carriage, whereas the upper is fixed to the slide. Compressed air is fed to both cylinders when in a none-working position, when both pistons are drawn in, and the slide is in the central position. Solenoids are energized for the fast travel to the left, when air is diverted to the lower cylinder, at the same time as the upper cylinder chamber is joined to the atmosphere, and air

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The automation of turret ...

is also fed to the tank. The oil pressed out from the latter enters the upper cylinder, and, therefore, carries the slide to the left. At the end of working stroke, all solenoids are de-energized, and air which enters both cylinders displaces oil from the upper cylinder, that executes the fast return. A diaphragm cylinder ensures the clamping of the turret. A detailed description is given of the pneumatic bar feeder which is characterized by the ball collet arrangement. The control apparatus has a step-feeler for the program read-out and a control relay-system. The signalling is obtained by microswitches and pneumatic signals which provide the feedback. The programming is achieved by a plug-in switchboard with some rows of holes; each of these is designed for setting the program of a successive element in the automatic cycle. All relays are joined in eight groups and are branched to the corresponding paths of the feeler through normally open contacts of the panel nests. One group provides safety interlocks. A detailed description of

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The automation of turret ...

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this arrangement is given by the authors, who claim that more effective use of equipment is ensured by its introduction. The machines were fixed to deal with some groups of components and by certain workers, and this permitted a high degree of specialization. There are 15 figures and 5 Soviet-bloc references.

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Card 4/5
-1

USHAKOV, A.I., gornyy inzh.

Ways of improving the quality, lowering the cost, and shortening
the time of repairing mining machinery. Gor. zhur. no.9:45-48 S
'61. (MIRA 16:7)

1. Karakubskoye rudoupravleniye.
(Mining machinery--Maintenance and repair)

VASIL'KOVSKIY, N. A., inzh.; USHAKOV, A. I., inzh.

Mechanized quarrying of limestone. Mekh.i avtom.proizv.18
no. 5:28-29 My '64. (MIRA 17:5)

USHAKOV, A.I., inzh.

Mechanization of build-up welding and welding operations at a
mining enterprise. Svar. proizv. no.3:32 Mr '65. (MIRA 18:5)

USHAKOV, A.I.

Testing the 51K214OK three-roller bits. Met. 1 gornorud.
prom. no.3:60-61 My-Je '65. (MIRA 18:11)

DEMIN, A.A., prof.; USHAKOV, A.M. (Novosibirsk)

M.G. Kurlov, a great representative of Russian medicine and an
outstanding therapist. Klin.med. 38 no.12:131-134 D '60.

(MIRA 14.12)

(KURLOV, MIKHAIL GEORGIEVICH, 1859-)

USHAKOV, A.M.

28-5-16/30

AUTHOR: Burov, A.S., Ignat'yev, V.N., Ushakov, A.M., Engineers

TITLE: High-Accuracy Pipes (Truby vysokoy tochnosti)

PERIODICAL: Standartizatsiya, 1957, # 5, p 68-70 (USSR)

ABSTRACT: The article presents the generalized results of a study of the work done by Soviet organizations and industrial plants from 1954 to 1957.

Seamless steel pipes for the oil industry as well as for other industry branches are being produced in accordance with standard "ГОСТ 301-50", which prescribes a limited quantity of steel grades and permits considerable dimension tolerances. Since the tolerances are large, the tubular blanks for many parts are thick-walled, and 70 to 80 % of the metal has to be removed by machining. In various branches of industry the machining allowances had to be reduced or, in some cases, machining was abandoned and some plants worked out their own technical specifications. This resulted in a new assortment of pipes, with smaller dimension allowances as well as with higher mechanical properties to eliminate heat treatment. The tube plant "Yuzhnotrubby zavod" (in Nikopol') introduced in 1954-

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High-Accuracy Pipes

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55 a new technology for the production of hot-rolled, high-accuracy pipes. The accuracy of the inner diameter is secured by the use of mandrels with a tolerance of ± 0.2 mm on their outer diameter. Technical conditions for production and acceptance of high-accuracy pipes were worked out (ЧМТД 4820-54). The dimensions and permissible inaccuracies of these pipes are given in table 1. A comparison with the permissible dimension deviations of the "ГОСТ 301-50" (Table 2) shows that the present equipment of pipe rolling plants, i.e. the automatic mills "140" and "400", can produce hot-rolled pipes with about 1.5 times less inaccuracies in diameter and wall thickness than is permissible by the "ГОСТ".

The Pervoural'skiy Pipe Plant (Pervoural'skiy novotrubnyy zavod) made experiments with cold drawing and cold rolling of high-accuracy pipes with high mechanical properties, using for both, drawing and rolling, pipes of 120 x 10 mm and 120 x 11 mm hot-rolled on a three-roller "40-160" mill with the usual plant technology. After rolling, the pipes were calibrated on a three-roller calibrating mill. Data on the accuracy of pipes rolled on a three-roller mill are not yet available, but in some published works this method is said to give a higher accuracy than rolling on automatic mills. The experiments, at the

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High-Accuracy Pipes

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Pervoural'skiy plant, as well as other experiments, verified this statement, since the accuracy achieved corresponds to the highest foreign data. In cold rolling on the mill "XNT-75", the deviations of the inner pipe diameters were within a range of 0.27 mm. The curvature of pipes after trueing on a screw press did not exceed 0.5 mm per meter of pipe. The pipes drawn on a 100-ton cold drawing machine, without interpass heat treatment to secure higher mechanical properties, also gave more accuracy than required by the "ГОСТ301-50".

The authors conclude that the "ГОСТ 301-50" for seamless steel pipes must be revised. The new standard should include hot-rolled pipes with tolerances for wall thicknesses of $\pm 8\%$ and for inner diameters of $+ 0.5\%$ and -1.0% ; cold-rolled pipes with high mechanical properties and deviations of outer diameters of $+ 0.4\%$ and $- 0.2\%$, inner diameters $+ 0.3\%$, wall thicknesses $+ 5\%$ and $- 3\%$.

There are 6 tables and 1 diagram.

AVAILABLE: Library of Congress

Card 3/3

OSIYEV, K.V.; USHAKOV, A.M.

Sewing machine attachment for welt cutting; Soviet Certificate of
Inventions No.130971. Kozh.-obuv.prom. 4 no.8:42 Ag '62.
(MIRA 15:8)

(Sewing machines--Technological innovations)

SHAKOV, A. M.

CA

30

Pine tar as an ingredient of synthetic rubber recipes.
 A. M. Ushakov, *Caoutchouc and Rubber* (U. S. S. R.)
 1938, No. 11, 21-34.—The effects of 15 kinds of tars,
 including oven, retort, Galipot, refined Pushkinskaya
 and birch tars, were studied by incorporating up to 15%
 by wt. and comparing with a parallel run of a combination
 of 3% stearic acid + 5% Rubrax. The resulting stocks
 were tested at their optimum cures for tensile strength,
 elongation, set, hardness (Shore), plasticity, modulus of
 elasticity, Geer aging and C dispersion and flocculation
 (agglomeration) induced by the softeners. These prop-
 erties were compared with the phys. properties of the
 original tars such as viscosity, moisture content, volatile
 substances, water-sol. acids and acid nos., with a view to
 setting up a standard for pine and other tars for the rub-
 ber industry. U. concludes that cooked tars impart
 better phys. properties, and suggests the following speci-
 fications of a Galipot tar for the tire industry: moisture
 0.5, ash 0.3, volatile 5%, water sol. acids 2 mg. KOH,
 acetic acid 0.2 and acid no. in mg. KOH per g. 30-40.
 Bernard Kilberg

ASB-5L6 METALLURGICAL LITERATURE CLASSIFICATION

VAVER, V.A.; PROKAZOVA, N.V.; USHAKOV, A.M.; POPEOVA, G.A.; FIECHMANN, L.D.

Chemistry of lipids. Report No.5. Dihydric alcohol derivatives as
new kinds of neutral lipids. Khim. prirod. soed. no.6:401-409 1965.
(MIRA 19:1)

1. Institut khimii prirodnykh soedineniy AN SSSR. Submitted
June 21, 1965.

STREPIKHEYEV, Yu.A.; SOKOLOV, I.A.; UGRASHEV, A.S.

Analysis of chlorophenyl isocyanates by developed methodology.
Zhur. anal. khim. 20 no.6:757-759, 1975. (RUSSIAN)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleeva.

1. ZAKHAROV, V. P., PROF., USHAKOV, A. P.

2. USSR (600)

4. Main Turkmen Canal

7. Cold-weather operating conditions of the hydro-technical structures of the Main Turkmen Canal. Gidr. stroi. 21 no. 8, '52.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

USHAKOV, A. F., DOCENT

Dissertation: "Investigation of the Precision of Mechanical Working of Blanks." Cand
Tech Sci, All-Union Correspondence Polytechnic Inst, 19 Apr 54. (Vechernyaya Moskva,
Moscow, 8 Apr 54)

SO: SUM 243, 19 Oct 1954

U3 HANOV AP

DUDKIN, A.S., kandidat tekhnicheskikh nauk; ORLOV, I.Ya., kandidat tekhnicheskikh nauk; USHAKOV, A.P., kandidat tekhnicheskikh nauk.

Some results of investigations of channel processes in sections of rivers flowing through a plain. Vop.gidr.no.1:113-124 '55.
(Hydraulics) (MLRA 9:12)

USHAKOV, A.P.; SHOLOKHOV, V.N., kand.tekhn.nauk

Fergana-type water works where the source of water is fed by rain
and snow. Trudy SANIIRI no.91:27-54 '58. (MIRA 14:1)
(Soviet Central Asia--Irrigation canals and flumes)

USHAKOV, A. P.

"Surakhan Petroleum Deposits (Tectonics and Oil-Bearing Ability)," Baku,
Azneftizdat, 1955

USHAKOV, Anateliy Petrovich; POTAPOV, I.I., redaktor; AL'TMAN, T.B.,
tekhnicheskii redaktor.

[The Surakhany oil field; structural geology and oil-bearing capacity] Surakhanskoe neftianoe mestorozhdenie; tektonika i neftenosnost'. Baku, Azerbaidzhanskoe gos. izd-vo neftianoi i nauchno-tekhn. lit-ry, 1955. 177 p. (MLRA 9:6)
(Surakhany--Oil fields)

USHAKOV, Anatoliy Petrovich

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USHAKOV, Anatoliy Petrovich

Surakhanskoye neftyanoye mestorozhdeniye (Surakhansk oil deposits)
Baku, Aznefteizdat, 1955.
177 p. diags., maps, tables.
Literatura: p. 174-178.

USHAKOV, A.P.

Structure of Apsheron thrust-faulted zones and their oil potential.
Azerb. neft. khes. 38 no.3;8-10 Mr '59. (MIRA 12:6)
(Apsheron Peninsula--Petroleum geology)

ALIYEV, A.D.; USHAKOV, A.P.

Formation of oil pools in the tectonic zone of Artem Island, Gyurgyany Cape, and the Darwin Shoal. Azerb. neft. khoz. 39 no.11:6-9 H '60. (MIRA 13:12)

(Caspian Sea--Petroleum geology)

ALIYEV, A.D.; USHAKOV, A.P.

Mechanism of the formation of folds in the anticlinal zone
of the Darwin Shoal, Gyurgyany-More field and Artem Island.
Azerb. neft. khoz. 40 no.9:8-11 S '61. (MIRA 15:1)
(Apsheron Archipelago--Folds (Geology))

ZEYNALOV, Z.I.; MAMEDOV, M.K.; USHAKOV, A.P.[deceased]; AKHMEDOVA,
A.M., red.; SHTEYNGEL', A.S., red.; NASIROV, N., tekhn.red.

[Geology, oil potential, and the economic development of
Artem Island] Geologiya, neftenosnost' i ekonomicheskoe raz-
vitiie Artemovskogo raiona. Baku, Azerneshr, 1963. 166 p.
(MIRA 17:3)

VOLENKIN, Yu.M.; YAZDOVSKIY, V.I.; GONIN, A.M.; VASIL'YEV, P.V.;
GYURDZHIAN, A.A.; GURCOVSKIY, N.N.; GORBOV, F.D.; SERYAPIN,
A.D.; BELAY, V.Ye.; BAYEVSKIY, R.K.; ALTUKHOV, G.V.;
KOPANEV, V.I.; KAS'YAN, I.I.; YEGOROV, A.D.; SIL'VESTROV,
M.M.; SIMPURA, S.F.; TEREENT'YEV, V.G.; KRYLOV, Yu.V.; FOMIN,
A.G.; USHAKOV, A.S.; DEGTYAREV, V.A.; VOLOVICH, V.G.;
STEPANTSOV, V.I.; MYASHNIKOV, V.I.; YAZDOVSKIY, V.I.; KASHIN,
P.S., tekhn. red.

[First space flights of man; the scientific results of the
medicobiological research conducted during the orbital
flights of the spaceships "Vostok" and "Vostok-2"] Pervye
kosmicheskie polety cheloveka; nauchny rezul'taty mediko-
biologicheskikh issledovaniy, provedennykh vo vremia orbi-
tal'nykh poletov korablei-sputnikov "Vostok" i "Vostok-2."
Moskva, Izd-vo Akad. nauk SSSR, 1962. 202 p. (MIRA 15:11)
(SPACE MEDICINE) (SPACE FLIGHT TRAINING)

S/865/62/002/000/005/042
D405/D301

AUTHORS: Ushakov, A.S. and Bychkov, V.P.
TITLE: Nutritional problems of space flight
SOURCE: Problemy kosmicheskoy biologii. v. 2. Ed. by H. Sisa-
kyan and V. Yazdovskiy. Moscow, Izd-vo AN SSSR, 1962,
48-53

TEXT: The nutritional problem of long space flights (from 6 months to several years) is considered. In this case the nutrition of the astronauts can be ensured only by a closed nutritional cycle in the space ship cabin. Unicellular algae are generally considered as the main component of such a closed nutritional cycle. Chlorocella-type algae were studied in more detail in the literature; a study of various other types of unicellular algae as possible sources of food on space ships and of methods of meal preparation from such sources is necessary. The nutritional requirements of astronauts with regard to animal fats and protein could be met by including in the food cycle various types of animals, from nonvertebrates (zoo-

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Nutritional problems ...

S/865/62/002/000/005/042
D405/D301

plankton) to higher vertebrates. Among the latter, hens are to be preferred; the hens themselves can be fed by unicellular algae, zooplankton, etc.; egg incubation would ensure continuity of the hen species (in case the mother hens would perish). Ducks and rabbits present similar advantages as hens. The use of zooplankton is limited at present by the large volume of water such cultures require; further studies are required in this direction. The carbohydrates in the astronaut's diet can be provided by cultivating crops of higher plants on the space ship; thereby no soil would be used, but artificial mixtures, thus saving starting-weight and enabling crop control. In conclusion, the creation of a closed nutritional cycle on board space ships for prolonged flights, presupposes research on optimal types of unicellular algae, higher plants, zooplankton, and animals, and the development of methods of their cultivation, storing and multiplication on board space ships.

Card 2/2

AKHLEBININSKIY, K.S.; BYCHKOV, V.P.; IL'INA, I.A.; KONDRAT'YEV, Yu.I.;
USHAKOV, A.S.

Providing the crew of a spaceship with food of animal origin.
Probl.kosm.biol. 1:145-151 '62. (MIRA 15:12)
(ASTRONAUTS--NUTRITION)

BOYKO, N.M.; BOYKOV, V.P.; BOYKOV, V.P.; BOYKOV, V.P.

Food value of unicellular algae, a survey. *Tr. Vsesoyuzn. nauch. issled. inst. zhivotnovodstva* (1962) (1962) 17-5)

VOLYNKIN, Yu.M.; YAZDOVSKIY, V.I., prof.; GENIN, A.M.; GAZENKO, O.G.; GUROVSKIY, N.N.; YEMEL'YANOV, M.D.; MIKHAYLOVSKIY, G.P.; GORBOV, F.D.; SERYAPIN, A.D.; BAYEVSKIY, R.M.; ALTUKHOV, G.V.; KOPANEV, V.I.; KAS'YAN, I.I.; MYASNIKOV, V.I.; TERENT'YEV, V.G.; BRYANOV, I.I.; FEDOROV, Ye.A.; FOMIN, V.S.; ARUTYUNOV, G.A.; ANTIPOV, V.V.; KOTOVSKAYA, A.R.; KAKURIN, L.I.; TSELIKIN, Ye.Ye.; USHAKOV, A.S.; VOLOVICH, V.G.; SAKSONOV, P.P.; YEGOROV, A.D.; NEUMYVAKIN, I.P.; TALAPIN, V.F.; SISAKYAN, N.M., akademik, red.; KOLPAKOVA, Ye.A., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[First group space flight; scientific results of medical and biological studies carried out during the group orbital flight of manned satellites "Vostok-3" and "Vostok-4"]
Первый групповой космический полет; научные результаты медико-биологических исследований, проведенных во время группового орбитального полета кораблей-спутников "Восток-3" и "Восток-4." Moskva, Izd-vo "Nauka," 1964. 153 p.
(MIRA 17:3)

VOLYNKIN, Yu.M.; ARUTYUNOV, G.A.; ANTIPOV, V.V.; ALTUKHOV, G.V.;
BAYEVSKIY, R.M.; BELAY, V.Ye.; BUYANOV, P.V.; BRYANOV, I.I.;
VASIL'YEV, P.V.; VOLOVICH, V.G.; GAGARIN, Yu.A.; GELIN, A.M.;
GORBOV, F.D.; GORSHKOV, A.I.; GUROVSKIY, N.N.; YESHANOV, N.Kh.;
YEGOROV, A.D.; KARPOV, Ye.A.; KOVALEV, V.V.; KOLOSOV, T.A.;
KORESHKOV, A.A.; KAS'YAN, I.I.; KOTOVSKAYA, A.R.; KALIBERDIN,
G.V.; KOPANEV, V.I.; KUZ'MINOV, A.P.; KAKURIN, L.I.; KUDROVA,
R.V.; LEBEDEV, V.I.; LEBEDEV, A.A.; LOBZIN, P.P.; MAKSIMOV,
D.G.; MYASNIKOV, V.I.; MALYSHKIN, Ye.G.; NEUMYVAKIN, I.P.;
ONISHCHENKO, V.F.; POPOV, I.G.; PORUCHIKOV, Ye.P.; SIL'VESTROV,
M.M.; SERYAPIN, A.D.; SAKSONOV, P.P.; TEREENT'YEV, V.G.; USHAKOV,
A.S.; UDALOV, Yu.F.; FOMIN, V.S.; FOMIN, A.G.; KHLEBNIKOV, G.F.;
YUGANOV, Ye.M.; YAZDOVSKIY, V.I.; KRICHAGIN, V.I.; AKULINICHEV,
I.T.; SAVINICH, F.K.; STMPURA, S.F.; VOSKRESENSKIY, O.G.;
GAZENKO, O.G., SISAKYAN, N.M., akademik, red.

[Second group space flight and some results of the Soviet
astronauts' flights on "Vostok" ships; scientific results of
medical and biological research conducted during the second
group space flight] Vtoroi gruppovoi kosmicheskii polet i neko-
torye itogi poletov sovetskikh kosmonavtov na korabliakh
"Vostok"; nauchnye rezul'taty medikobiologicheskikh issledovaniy,
provedennykh vo vremia vtorogo gruppovogo kosmicheskogo poleta.
Moskva, Nauka, 1965. 277 p. (MIRA 18:6)

L 14263-66 EWT(1)/FS(v)-3 SCTB DD/RD
ACC NR: AT6003846 SOURCE CODE: UR/2865/65/004/000/0107/0118

AUTHOR: Abakumova, I. A.; Akhlebininskiy, K. S.; Bychkov, V. P.; Demochkina, N. G.;
Kondrat'yev, Yu. I.; Ushakov, A. S.

ORG: none

TITLE: Some data on the animal link in a closed ecological system

12
41
B+1

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii,
v. 4, 1965, 107-118

TOPIC TAGS: closed ecology system, space nutrition, commercial animal, animal husbandry

ABSTRACT: Data on the animal part of a closed ecological system such as might be used in spaceflight (based on unicellular algae, higher plants, animals, and mar) are presented. Most of the information concerns chickens and ducks, good choices because they mature fast, produce a sufficient quantity of nutritious food, and have a high yield of meat and eggs per unit of feed. Comparative analysis shows that to produce 1 kg of meat and fat, cattle require approximately twice as much feed, and pigs 1.5 times as much
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ACC NR: AT6003846

feed as broiler chickens. Furthermore, new generations of chickens and ducks are easily raised by incubating fertilized eggs, and their offspring (taken together) weigh more than the offspring of other animals. The meat of chickens and ducks has more protein and is of higher food value than the protein of other animals. Calculations are made of the number of ducks required to provide a cosmonaut with his daily requirement of animal protein (40-45 g), and tables showing turnover of the flock are listed. For instance, it was concluded that 9 Peking ducks (40 days old) will feed a cosmonaut for 1 month. Fifty eggs are needed for food and hatching in the same period. The daily food and water requirement for this duck population is computed, together with the amount of respired CO₂. Analogous comparative data are listed for chickens. Charts of the nutritive content and caloric value of the food produced by chickens and ducks are included.

It is calculated that for 1 kcal of this food, 25.4 kcal of feed is expended for a duck, and 22.2 kcal for a chicken. Of course, the needs of other links in the closed system will determine whether chickens or ducks are finally chosen. Both animals have advantages: ducks, for instance, can be fed a

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ACC NR: AT6003846

higher percentage of green fodder, and they both mature and gain weight faster than chickens. It must be emphasized that these are only preliminary calculations. More information must be collected about these and other animals, and many experiments must be conducted with each in a closed ecological system. Orig. art. has: 9 tables. [ATD PRESS: 4091-F]

SUB CODE: 02, 06 / SUBM DATE: none / ORIG REF: 013 / OTH REF: 002

Card 3/3 *BC*

L 45964-66 JXT(CZ)/GD/RD

ACC NR: AT6030694

SOURCE CODE: UR/0000/66/000/000/0023/0028

AUTHOR: Bychkov, V. P.; Bcyko, N. N.; Kasatkina, A. G.; Kondrat'yev, Yu. I.; Ushakov, A. S.

33
BT1

ORG: none

TITLE: The possibility of using dehydrated products in cosmonaut diets

2

SOURCE: Konferentsiya po kosmicheskoy biologii i meditsine, 1964. Materialy. Moscow, Inst. mediko-biol. problem, 1966, 23-28

TOPIC TAGS: space biology, space food, human physiology, nutrition, biologic metabolism

ABSTRACT: Experiments were conducted to study the effects of dehydrated food rations on human metabolism. Freeze-dried and heat-dried food products were used to make up three different rations, with caloric values from 2117 to 2974 kcal. The food was eaten dry, but could be washed down with unlimited amounts of water. Among the foods used were freeze-dried meat products (pork and beef sausage, beef roll, ham and smoked pork), dried milk products (a 5:5:11:1 mixture of cream, walnuts, milk, and sugar, and a 5:5:1 mixture of pot cheese, cream, and sugar) and candy and pastry, (vitaminized caramels, lemon drops, etc). Biomedical monitoring of the six healthy subjects was conducted throughout the experiment, and each subject kept a medical journal. In the first test, laboratory workers were fed normally

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ACC NR: AT6030694

for 10 days, and then for 20 days ate equivalent amounts of the same foods, dried, (Ration No.1, see Table 1) while performing their normal tasks. In the second test

Table 1. Weight, chemical composition, and caloric value of food rations

Number of ration	Weight in g	Moisture in g	Protein in g	Fat in g	Carbohydrate in g	Ash in g	Caloric value in kcal
1	609	43.4	112.3	93.2	339.0	21.1	2117
2	638	34.4	118.1	111.4	354.7	19.40	2974
3	615	51.6	107.8	106.6	326.1	22.90	2770

one subject was fed Ration No.2 and water regenerated from urine for 35 days. He remained in a small chamber (7 m³), where normal atmospheric and microclimatic conditions were maintained; his day was divided into sleep (8 hr), exercise (35—40 min), meals (three per day), and drafting work and reading (specially selected literature). In the third test two subjects stayed in a similar chamber for 33 days, during which time they were fed Ration No.3 for 22 days and normal food in the 11 days before and after. One received water regenerated from urine and the other distilled water. The system of biosensors was also tested in this experiment. In addition to sleep and exercise periods (8 hr and 35—40 min, respectively), and meals, the subjects' time was occupied in recording physiological functions using the sensors.

Card 2/3

L 45964-66

ACC NR: AT6030694

Medical journals of all subjects showed that the dehydrated rations were completely consumed, and that the appetite and general well-being of the subjects remained good. No differences were noted between the regenerated and distilled water. Weight fluctuations showed individual differences, since two subjects eating Ration No.1 lost weight and one gained. Water consumption and urine excretion were normal, although daily diuresis decreased somewhat during the experimental period. Assimilation of proteins and fats decreased during feeding with the test rations, while carbohydrate assimilation was unchanged. The slightly negative nitrogen balance observed in the younger, heavier subjects fed Ration No.3 indicates an insufficient amount of protein for their needs and points up the necessity for individual tailoring of food rations. In general, physiological indices monitored did not exceed normal limits. It was concluded that the rations tested can serve as the basis for a month-long cosmonaut diet. Orig. art. has: 4 tables. [JS]

SUB CODE: 06/ SUBM DATE: 14Apr66/ ATD PRESS: 5086

Card 3/3 hs

L 06863-67 EWT(1) SCTB DD/GD/RD

ACC NR: AT6036675

SOURCE CODE: UR/0000/66/000/000/0369/0370

AUTHOR: Ushakov, A. S. 30

ORG: none

TITLE: Problem of nutrition on spaceflights [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 369-370

TOPIC TAGS: closed ecological system, life support system, space nutrition, plant physiology, space food

ABSTRACT:

The digestive function, which, along with the cardiovascular system, shows a sharp instability in response to the unfavorable effects of spaceflight factors, plays a special role in the systemic reactivity of the organism. The food for spaceflight is among the most difficult problems in space medicine. This is because not enough is known concerning what foods are necessary and how nutritional requirements vary under normal conditions and under the extreme conditions of spaceflight.

Card 1/3

L 08863-67

ACC NR: AT6036675

The difficulty in adapting to unusual food products and the biological difficulties of storing and producing food on board spaceships make this problem still more difficult. 0

Food supplies for relatively short spaceflights can be stored on board. The most promising method is the storage of dehydrated food in conjunction with regeneration of water.

The solution to the problem of raising food currently calls for the creation of closed biological systems using such biocomponents as unicellular algae, higher plants, and edible animals. The technical difficulties of creating such systems make it necessary to utilize small numbers (2 or 3) of links in the system. Such systems raise the problem of processing and utilizing new types of products, such as algae, bacteria, invertebrates, and others as food.

One of the promising solutions for raising food involves the combined utilization of biological and physical-chemical synthesis of food products and, at the same time, building supplies on board of certain biologically important compounds which are required in minute amounts. There is considerable interest in the physical-chemical synthesis of carbohydrates

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I. 08863-67

ACC NR: AT0036675

from organic wastes along with the creation of supplies of irreplaceable amino acids, fatty acids, mineral substances, and vitamins in relation to a minimal greenhouse. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3 egk

ACC NR: AT6036464

SOURCE CODE: UR/0000/66/000/000/0008/0008

AUTHOR: Babakumova, I. A.; Vasilenko, L. K.; Kozlova, A. N.; Kondrat'yev, Yu. I.;
Ushakov, A. S.

ORG: none

TITLE: Data on the food value of several life support system biocomponents
[Paper presented at conference on problems of space medicine held in Moscow
from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy
kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii,
Moscow, 1966, 8

TOPIC TAGS: life support system, closed ecological system, space nutrition,
space food, chlorella ✓

ABSTRACT:

Experiments were performed testing the nutritional value of uni-
cellular algae, yeasts, and bacteria (including organism with an altered
amino acid composition). Young male rats were used in experiments
which averaged about a month in duration. In some experiments viability

Card 1/2

ACC NR: AT6036464

was tested. Weight, external appearance, behavior, and appetite were observed. Assimilation of basic substances, the nitrogen balance, the composition of hemoglobin and erythrocytes in the blood, and certain biochemical indices were determined.

Pathological examination of the animals was performed and individual internal organs were weighed. In experiments where unicellular algae were used as the source of protein, the average duration of viability was 5.5 months. When animals were fed only the biomass of the algae, they lived only about one month. Death results from malnutrition. Experiments showed that greatest nutritional value was provided when the biomass of unicellular algae was augmented by an increased amount of cysteine. The least value was provided by biomass of yeasts. The nutritional value of the purified biomass of microbacteria was higher than that of the unpurified biomass. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2

1. 1000-07 001(1) 0010 00/00

ACC NR: 0000000000

SOURCE CODE: 00/0000/66/000/000/0000/0001

AUTHOR: Klyushkina, N. S.; Troitskaya, I. T.; Ushakov, A. S.; Pofanov, V. I.

ORG: none

TITLE: The problem of the nutritional value of proteins from unicellular algae ²
[Paper presented at the Conference on Problems of Space Medicine held in Moscow
from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966, Problemy
kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii,
Moscow, 1966, 206-207

TOPIC TAGS: life support system, closed ecological system, space nutrition, space
food, chlorella

ABSTRACT: Proteins constitute from 8-88% of unicellular algae depending on
the method of their cultivation. The present experiment was performed
in order to determine the nutritional value of algal proteins.

The biomass of algae, obtained by the open cultivation method, was
subjected to discoloration by alcohol. This process removed a significant
amount of pigments, toxins, and allergens. The digestibility of proteins
in the discolored mass, as determined in vitro, reached 70%.

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L 10266-67

ACC NR: AT6036582

Experiments were performed on rats which were placed on diets whose only protein source was unicellular algae (Chlorella and Scenedesmus). Rats fed on casein and soya-bean proteins were used as controls. Experimental feeding was continued for 122 days. Observations were performed with respect to weight, growth, effectiveness of digestive processes, and nitrogen balance, as well as a series of biochemical indices which indicate the value of the protein component of nutrition. Generative functions and immunological resistance of the experimental animals were also tested.

The results indicate that Chlorella and Scenedesmus proteins possess great biological value. At the same time a certain retardation in the weight increase of experimental animals was noted. This confirms the known data concerning the deficit of sulphur-bearing amino acids in proteins of vegetable origin. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2

ACC NR: AP7002685

SOURCE CODE: UR/0244/66/025/006/0009/0014

AUTHOR: Kondrat'yev, Yu. I. (Moscow); Bychkov, V. P. (Moscow); Ushakov, A. S. (Moscow); Boyko, N. N. (Moscow); Klyushkina, N. S. (Moscow); Abaturova, Ye. A. (Moscow); Terpilovskiy, A. M. (Moscow); Korneyeva, N. A. (Moscow); Belyakova, M. I. (Moscow); Kasatkina, A. G. (Moscow)

ORG: none

TITLE: The use of 50 and 100 g of dry unicellular algae in human food rations

SOURCE: Voprosy pitaniya, v. 25, no. 6, 1966, 9-14

TOPIC TAGS: food chemistry, algae, biologic metabolism, ~~human~~ nutrition, human physiology, *FOOD RATION*

ABSTRACT: The effect of a diet containing the addition of 50 g of dry unicellular algae (a mixture of Chlorella pyrenoidosa and Scenedesmus quadricauda) on several metabolic indices was studied in three volunteers for 23 days. A ration containing an additional 100 g of the same biomass was given to four other volunteers for 22 days. The following values were determined: in the blood — residual nitrogen, urea, ammonia, cholesterol, phospholipids; in the urine — specific gravity, pH, total nitrogen, urea, ammonia, creatine, creatinine, amino-acid nitrogen,

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UDC: 613.26:582.26

ACC NR: AP7002685

17-21-dioxy-20-ketocorticosteroids; in the feces — total nitrogen, fat, ash, and carbohydrates. Daily water intake and diuresis were calculated. Analysis of the data obtained showed that the metabolic indices investigated changed insignificantly in comparison with control data (with the exception of lipid metabolism data) and remained within physiologically normal limits. It was concluded that it is possible to include up to 100 g of dry unicellular algae in the human diet over a period of 22 days.

SUB CODE: 06/ SUBM DATE: 18Feb65/ ORIG REF: 003/ OTH REF: 004
ATD PRESS: 5113

Card 2/2

ACC NR: AP7002686

SOURCE CODE: UR/0244/66/025/006/0014/0019

AUTHOR: Kondrat'yev, Yu. I. (Moscow); Bychkov, V.P. (Moscow); Ushakov, A.S. (Moscow); Boyko, N.H. (Moscow);
 Klyushkina, N.S. (Moscow); Abaturova, Ye.A. (Moscow); Terpilovskiy, A.M. (Moscow); Korneyeva, N.V. (Moscow);
 Belyakova, M.I. (Moscow); Vorob'yeva, Ye. S. (Moscow); Demochkina, N.G. (Moscow); Kasatkina, A.G. (Moscow)

ORG: none

TITLE: The use of 150 g of dry unicellular algae in human good rations

SOURCE: Voprosy pitaniya, v. 25, no. 6, 1966, 14-19

TOPIC TAGS: food chemistry, algae, biologic metabolism, human nutrition, human physiology, *FOOD RATION*

ABSTRACT: The effect of food rations containing an addition of 150 g of dry unicellular algae (a mixture of Chlorella and Scenedesmus) on human metabolic processes was studied for 20 days in five volunteers. The following values were determined: in blood -- residual nitrogen, urea, ammonia, cholesterol, phospholipids; in the urine -- specific gravity, pH, total nitrogen, urea, ammonia, creatine, amino-acid nitrogen, 17-21-dioxy-20-ketocorticosteroids; in the feces -- total nitrogen, ash, and carbohydrates. Reactions of the subjects to the experimental ration varied from no complaint to inflammation of face and hands, dyspeptic

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UDC: 613.26:582.26

ACC NR: AP7002686

phenomena, etc. These apparently allergic phenomena require further investigation; however, they could be caused by various components of the biomasses of unicellular algae. Inclusion of 150 g of dry unicellular algae in food rations led to some shifts in the state of health in the majority of the subjects, precluding recommendation for its inclusion in human diets for 20 days. [SW]

SUB CODE: 06/ SUBM DATE: 18Feb65 / ATD PRESS: 5113

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3(5)

SOV/132-59-7-9/17

AUTHORS: Kudymov, E.Ya. and Ushakov, A.V.

TITLE: A Photo-Electric Device for the Study of the Luminescence of Walls of a Bore Hole

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 7, pp 34-36 (USSR)

ABSTRACT: This is a description of a luminograph for the study of the degree of luminescence of walls of a bore-hole, more especially - for the evaluation of the degree of saturation of oil-bearing beds of rocks in an oil well. The device was designed and constructed according to plans elaborated by the authors. It consists of a 150 cm steel cylinder, 90 mm in diameter, in which the device is assembled. A glass lens is fixed in the side of the cylinder. Ultra-violet rays produced by UFO-4 valve cause the luminescence of the photomultiplier, whereas current impulses originate on the anode of the photomultiplier corresponding to separate changeable amounts of the reflected luminescence on the cathode. These intensity impulses are passed onto the mantle

Card 1/3